		Pushing the En	velope
		2009 Mathem	atics
		Standards of Le	earning
Virginia Mathematics			
Grade 5	04-4-	Otava da vida	
Activity/Lesson	State	Standards	The student will determine an execute of
History of Aviation			The student will determine an amount of
History of Aviation Propulsion (pgs. 5-9)	VA	MA.5.5.10	elapsed time in hours and minutes within a 24-hour period.
Fropulsion (pgs. 5-9)	VA	IVIA.3.3.10	The student will describe and determine the
			perimeter of a polygon and the area of a square,
			rectangle, and right triangle, given
Chemistry (pgs. 25-			the appropriate measures. Find perimeter, area,
41)	VA	MA.5.5.8.a	and volume in standard units of measure.
,			The student will describe and determine the
			perimeter of a polygon and the area of a square,
			rectangle, and right triangle, given
			the appropriate measures. Differentiate among
			perimeter, area, and volume and identify
			whether the application of the concept of
Chemistry (pgs. 25-			perimeter, area, or volume is appropriate for a
41)	VA	MA.5.5.8.b	given situation.
			The student will describe and determine the
			perimeter of a polygon and the area of a square,
Physics and Math			rectangle, and right triangle, given the appropriate measures. Investigate and
(pgs. 43-63)	VA	MA.5.5.18.a	describe the concept of variable.
(pgs. 40-00)		IVI/1.5.5. 10.a	describe the concept of variable.
			The student will describe and determine the
			perimeter of a polygon and the area of a square,
			rectangle, and right triangle, given
			the appropriate measures. Write an open
Physics and Math			sentence to represent a given mathematical
(pgs. 43-63)	VA	MA.5.5.18.b	relationship, using a variable.
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
	•	Pushing the En	velope
		2009 Mathem	
		Standards of Le	earning
Virginia Mathematics			
Grade 6	Ctata	04	
Activity/Lesson	State	Standards	The student will estimate and then determine
			length, weight/mass, area, and liquid
			volume/capacity, using standard and
			nonstandard units of measure. Describe and
Chemistry (pgs. 25-			determine the volume and surface area of a
41)	VA	MA.6.6.10.d	rectangular prism.
,	1 -		The student will describe and compare data,
Physics and Math			using ratios, and will use appropriate notations,
(pgs. 43-63)	VA	MA.6.6.1	such as a/b, a to b, and a:b.

Physics and Math (pgs. 43-63)	VA	MA.6.6.2.a	The student will identify representations of a given percent and describe orally and in writing the equivalence relationships among fractions, decimals, and percents.
		Pushing the En	nyelone
		2009 Mathem	
		Standards of Le	
Virginia Mathematics			January 1
Grade 7			
Activity/Lesson	State	Standards	
Types of Engines (			The student will evaluate algebraic expressions
pgs. 11-23)	VA	MA.7.7.13.b	for given replacement values of the variables.
Chemistry (pgs. 25-			The student will describe volume and surface
41)	VA	MA.7.7.5.a	area of cylinders.
			The student will solve practical problems
Chemistry (pgs. 25-			involving the volume and surface area of
41)	VA	MA.7.7.5.b	rectangular prisms and cylinders.
			The student will describe how changing one
Chemistry (pgs. 25-			measured attribute of a rectangular prism affects
41)	VA	MA.7.7.5.c	its volume and surface area.
Chemistry (pgs. 25-			The student will evaluate algebraic expressions
41)	VA	MA.7.7.13.b	for given replacement values of the variables.
Physics and Math	\ /A	MA 7 7 40 b	The student will evaluate algebraic expressions
(pgs. 43-63)	VA	MA.7.7.13.b	for given replacement values of the variables.
		Pushing the En	nyelone
		2009 Mathem	
		Standards of Le	
Virginia Mathematics			
Grade 8			
Activity/Lesson	State	Standards	
			The student will apply the order of operations to
Types of Engines (			evaluate algebraic expressions for given
pgs. 11-23)	VA	MA.8.8.4	replacement values of the variables.
			The student will apply the Pythagorean Theorem
			to find the missing length of a side of a right
Types of Engines (			triangle when given the lengths of the other two
pgs. 11-23)	VA	MA.8.8.10.b	sides.
			The student will apply the order of operations to
Chemistry (pgs. 25-			evaluate algebraic expressions for given
41)	VA	MA.8.8.4	replacement values of the variables.
			The student will Investigate and solve practical
Chemistry (pgs. 25-			problems involving volume and surface area of
41)	VA	MA.8.8.7.a	prisms, cylinders, cones, and pyramids.
Observatory / OF			The student will describe how changing one
Chemistry (pgs. 25-	\ /A	NAA 0 0 7 1	measured attribute of a figure affects the volume
41)	VA	MA.8.8.7.b	and surface area.
			The student will apply the Pythagorean Theorem
Chamietry (nes 25			to find the missing length of a side of a right
Chemistry (pgs. 25-	\/^	MA Q Q 10 h	triangle when given the lengths of the other two
41)	VA	MA.8.8.10.b	sides.

			The student will salve practical problems
Dhysics and Math			The student will solve practical problems
Physics and Math	/^	NAA 0 0 0 -	involving rational numbers, percents, ratios, and
(pgs. 43-63)	VA	MA.8.8.3.a	proportions.
DI : 184 (1			The student will apply the order of operations to
Physics and Math			evaluate algebraic expressions for given
(pgs. 43-63)	VA	MA.8.8.4	replacement values of the variables.
			The student will apply the Pythagorean Theorem
			to find the missing length of a side of a right
Physics and Math			triangle when given the lengths of the other two
(pgs. 43-63)	VA	MA.8.8.10.b	sides.
			The student will apply the Pythagorean Theorem
			to find the missing length of a side of a right
Rocket Activity (pgs.			triangle when given the lengths of the other two
69-75)	VA	MA.8.8.10.b	sides.
		Pushing the Env	
		2009 Mathema	
Virginia Mathamatica		Standards of Lea	arning
Virginia Mathematics			
Grades 9-12 (Algebra		Ctondovdo	
Activity/Lesson	State	Standards	The student will remove and worked accorditation
			The student will represent verbal quantitative
T (F : /			situations algebraically and evaluate these
Types of Engines (			expressions for given replacement values of the
pgs. 11-23)	VA	MA.9-12.A.1	variables.
			The student will investigate and analyze function
			(linear and quadratic) families and their
			characteristics both algebraically and
Types of Engines (			graphically, including, finding the values of a
pgs. 11-23)	VA	MA.9-12.A.7.e	function for elements in its domain.
			The student will represent verbal quantitative
			situations algebraically and evaluate these
Chemistry (pgs. 25-			expressions for given replacement values of the
41)	VA	MA.9-12.A.1	variables.
			The student will investigate and analyze function
			(linear and quadratic) families and their
			characteristics both algebraically and
Chemistry (pgs. 25-			graphically, including, finding the values of a
41)	VA	MA.9-12.A.7.e	function for elements in its domain.
			The student will represent verbal quantitative
			situations algebraically and evaluate these
Physics and Math			expressions for given replacement values of the
(pgs. 43-63)	VA	MA.9-12.A.1	variables.
			The student will perform operations on
			polynomials, including factoring completely first-
			and second-degree binomials and trinomials in
			one or two variables. Graphing calculators will
Physics and Math			be used as a tool for factoring and for confirming
(pgs. 43-63)	VA	MA.9-12.A.2.c	algebraic factorizations.
NF 355 55)	1 ** *		

Physics and Math (pgs. 43-63)  Physics and Math (pgs. 43-63)	VA VA	MA.9-12.A.6.a MA.9-12.A.7.e	The student will graph linear equations and linear inequalities in two variables, including determine the slope of a line when given an equation of the line, the graph of the line, or two points on the line. Slope will be described as rate of change and will be positive, negative, zero, or undefined.  The student will investigate and analyze function (linear and quadratic) families and their characteristics both algebraically and graphically, including finding the values of a function for elements in its domain.  The student will investigate and analyze function
Physics and Math (pgs. 43-63)	VA	MA.9-12.A.7.f	(linear and quadratic) families and their characteristics both algebraically and graphically, including making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic.
		Ducking the En	walens.
		Pushing the Env 2009 Mathema	
		Standards of Le	
Virginia Mathematics	S		
Grades 9-12 (Algebra		d Data Analysis)	
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	VA	MA.9- 12.AFDA.4	The student will transfer between and analyze multiple representations of functions, including algebraic formulas, graphs, tables, and words. Students will select and use appropriate representations for analysis, interpretation, and prediction.
Chemistry (pgs. 25-41)	VA	MA.9- 12.AFDA.4	The student will transfer between and analyze multiple representations of functions, including algebraic formulas, graphs, tables, and words. Students will select and use appropriate representations for analysis, interpretation, and prediction.
Physics and Math (pgs. 43-63)	VA	MA.9- 12.AFDA.4	The student will transfer between and analyze multiple representations of functions, including algebraic formulas, graphs, tables, and words. Students will select and use appropriate representations for analysis, interpretation, and prediction.
			The student will transfer between and analyze multiple representations of functions, including algebraic formulas, graphs, tables, and words.
Rocket Activity (pgs. 69-75)	VA	MA.9- 12.AFDA.4	Students will select and use appropriate representations for analysis, interpretation, and prediction.

		2009 Mathema	tics
		Standards of Lea	arning
Virginia Mathematio	cs		
Grades 9-12 (Algeb	ra II)		
Activity/Lesson	State	Standards	
Physics and Math (pgs. 43-63)	VA	MA.9-12.AII.1.b	
Physics and Math			The student will recognize the general shape of function (absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic) families and will convert between graphic and symbolic forms of functions. A transformational approach to graphing will be employed. Graphing calculators will be used as a tool to investigate the shapes and behaviors of
(pgs. 43-63)	VA	MA.9-12.AII.6	these functions.